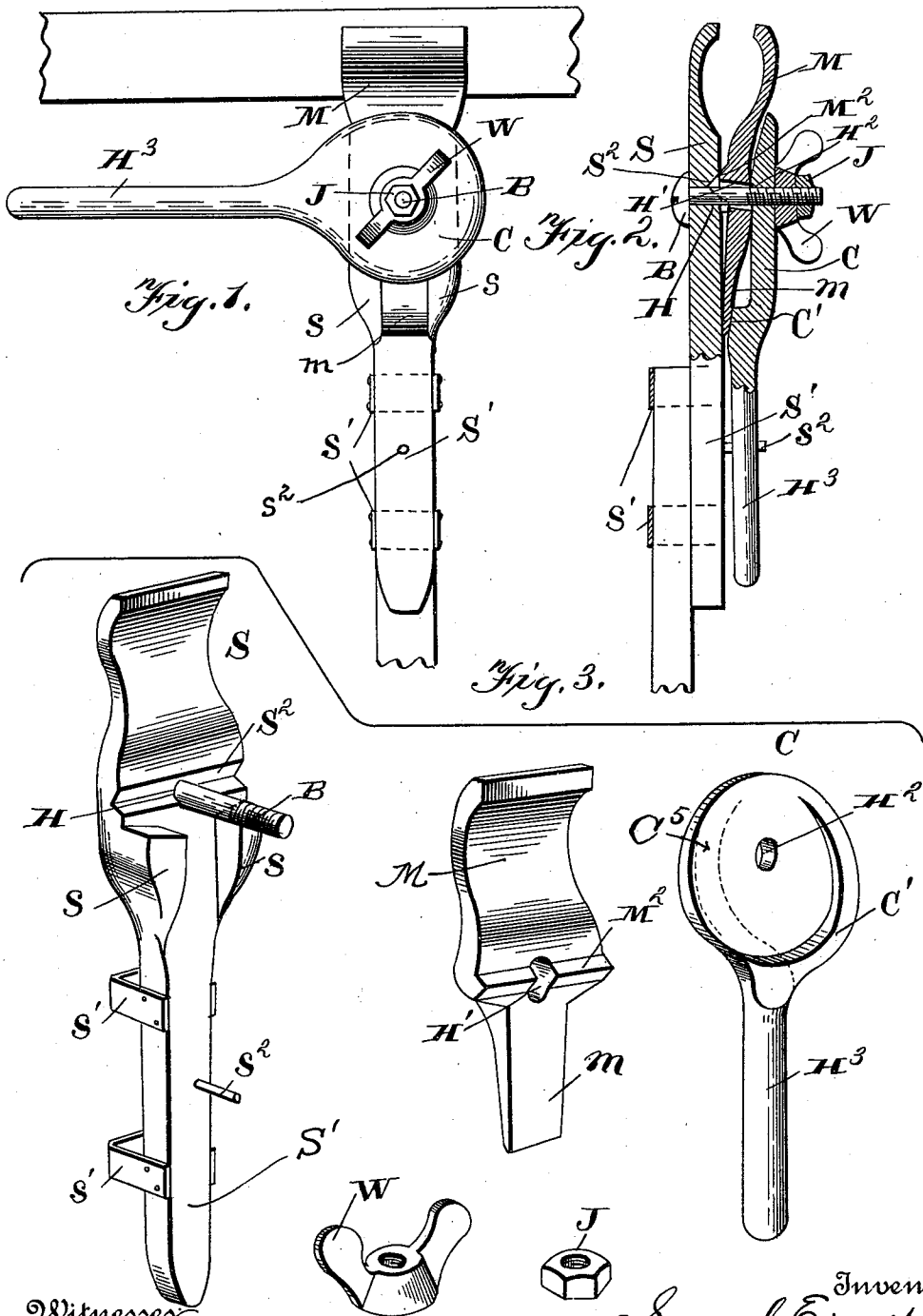


(No Model.)

S. ERNST.
HARNESS CLAMP.

No. 583,569.

Patented June 1, 1897.



Witnesses:
Geo. E. Frick,
Mark Marey

 Inventor:
Samuel Ernst,
by *Collamer & Co.*,
Attorneys.

UNITED STATES PATENT OFFICE.

SAMUEL ERNST, OF GLEN ELDER, KANSAS.

HARNESS-CLAMP.

SPECIFICATION forming part of Letters Patent No. 583,569, dated June 1, 1897.

Application filed September 18, 1896. Serial No. 606,225. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL ERNST, a citizen of the United States, and a resident of Glen Elder, Mitchell county, State of Kansas, have invented certain new and useful Improvements in Harness-Clamps; and my preferred manner of carrying out the invention is set forth in the following full, clear, and exact description, terminating with claims particularly specifying the novelty.

This invention relates to harness, and more especially to the class thereunder known as "tools;" and the object of the same is to provide an improved harness-clamp for holding parts of harness while being operated upon by the worker.

To this end the invention consists in a clamp or vise for holding harness, which is constructed substantially as hereinafter more fully described and claimed, and as illustrated in the accompanying drawings, wherein—

Figure 1 is a front view illustrating this clamp in the act of holding a piece of harness. Fig. 2 is a central vertical section thereof with the jaws open. Fig. 3 is a perspective detail of certain parts separated so as to show their construction.

Referring to the said drawings, the letter S designates what I will call the "stationary" jaw, which comprises the jaw proper provided with two lugs *s*, a shank *S'*, and (preferably) a pair of staples or other devices *s'* on this shank, by means of which it may be attached to an upright, a work-bench, or any other suitable support.

M is the movable jaw, reduced at its lower end into a tongue *m*, as seen in Fig. 3, which tongue fits between the lugs *s*, while the body of this jaw corresponds with and complements that of the fixed jaw, as usual in devices of this character. The fixed jaw is preferably provided with a transverse groove *S²* just above the lugs *s*, and the movable jaw has a transverse rib or projection *M²* at a corresponding point, which fits loosely into the groove, as seen in Fig. 2, and prevents longitudinal displacement of the jaws.

The two jaws are held together by a bolt B, which passes through a hole H in the fixed jaw, then through an oval hole H' in the movable jaw, then receives a winged nut W, which may be turned as required to adjust the length

of the bolt, and finally by preference receives a jam-nut J to hold the winged nut from displacement after it has been set. The location of the holes H and H' is just above the lugs *s* of the fixed jaw and just through the rib *M²* of the movable jaw, so that these parts perform their function uninterruptedly even though the bolt passes through them.

The letter C designates a cam-plate of approximately circular configuration, which plate has a central hole H² to receive the bolt B and a handle H³, projecting from one side; and on the under side of this plate is formed a cam C', which follows a circle around its central hole and gradually increases in thickness from one end to the other. Said hole is mounted on the bolt B and the handle limited by preference in its movement by means of the pin or stud *s²*, projecting from the shank *S'* about where seen, although this feature could be omitted, if preferred. The central hole of the cam-plate is mounted on the bolt under its winged nut and the whole assumes the position seen in Fig. 1 of the drawings.

When now it is desired to separate the jaws, so as to release whatever may be held between them, the handle H³ is moved from the position shown in Fig. 1 down so that it strikes the stud *s²*, and this movement causes the cam-face C' to pass from behind the movable jaw M down around behind the tongue *m*, so that this jaw as a whole is rocked over the pivot formed by the rib *M²* and its clamping-face is moved away from that of the fixed jaw. The work having been inserted between the thus separated jaws, they are approximated by moving the handle H³ in the opposite direction, which movement carries the cam around behind the body of the movable jaw and causes the same to be pressed toward that of the fixed jaw. When a greater or less latitude is desired between the working faces of the jaws, the winged nut can be set, and the jam-nut (if employed) also set behind it to prevent its movement. All parts are of the desired sizes, shapes, proportions, and materials, and such changes may be made as come within the scope of my invention. For instance, the jaws M and S could, and probably would be, made somewhat wider than shown in the drawings, especially if it

were desired or intended that they should grasp some rather long article which might be of such soft material that narrow jaws would mar it. Another modification which occurs to me at this time is that the cam might be placed around the opposite edge of the plate C, as seen in dotted lines at C⁵, Fig. 3, which construction would cause the jaws to be closed when the handle H³ was down instead of up, as in Fig. 1. The latter position might under some circumstances bring the handle in the way of the operator and he would prefer the modified construction.

What is claimed as new is—

1. In a harness-clamp, the combination with the fixed jaw, the movable jaw rocking between its ends upon one side of the fixed jaw, and a bolt passing through the jaws at the rocking-point; of a cam-plate centrally mounted on said bolt behind the movable jaw, and a cam on the inner face of the plate struck on a circle around its center, as and for the purpose set forth.

2. In a harness-clamp, the combination with the fixed jaw, the movable jaw rocking between its ends upon one side of the fixed jaw, and a bolt passing through the jaws at the rocking-point; of a spiral cam journaled on the bolt behind the movable jaw, a winged nut on the bolt behind the cam, and a jam-nut behind the winged nut, as and for the purpose set forth.

3. In a harness-clamp, the combination with the fixed jaw having a stud, the movable jaw rocking upon one side of the fixed jaw, a bolt through the jaws, and a winged nut on the bolt; of a plate centrally journaled on the bolt under said nut, a radial handle on this plate adapted to strike the stud at one extreme of its movement, and a spiral cam on the plate next the back of the movable jaw, as and for the purpose set forth.

4. In a harness-clamp, the combination with the fixed jaw whose shank is provided on one face with spaced lugs, the movable jaw having at its lower end a reduced tongue working loosely between such lugs, this jaw rocking on the fixed jaw at a point between its body and tongue, and a bolt passing through the jaws at the rocking-point; of a cam mounted on the bolt and adapted to press against the rear of the movable jaw above or below the rocking-point, as and for the purpose set forth.

5. In a harness-clamp, the combination with the fixed jaw whose shank is provided on one

face with spaced lugs, and the movable jaw having at its lower end a reduced tongue working loosely between said lugs, this jaw rocking on the fixed jaw at a point between its body and tongue; of a spiral cam adapted to press against the rear of the movable jaw above or below such rocking-point, as and for the purpose set forth.

6. In a harness-clamp, the combination with the fixed jaw having a transverse groove across one face, the movable jaw having a transverse rib between its ends loosely entering said groove, and a bolt passing loosely through the jaws at the point of engagement between the rib and groove; of a cam mounted on the bolt and adapted to press against the rear of the movable jaw above or below the rocking-point, as and for the purpose set forth.

7. In a harness-clamp, the combination with the fixed jaw having a transverse groove across one face, and the movable jaw having a transverse rib between its ends loosely entering said groove; of a spiral cam adapted to press against the rear of the movable jaw above or below the rocking-point, as and for the purpose set forth.

8. In a harness-clamp, the combination with the fixed jaw having a transverse groove in one face, a pair of spaced lugs just below such groove, and the movable jaw having a transverse rib between its ends loosely entering said groove, the lower end of this jaw being reduced and working loosely between said lugs; of means substantially such as described for exerting pressure on the back of the movable jaw above or below said rib, as and for the purpose set forth.

9. In a harness-clamp, the combination with the fixed jaw having a hole through its body, and the movable jaw having a transverse projecting rib between its ends and an oval hole through its body and through said rib; of a bolt passing through the two holes, a plate journaled on the bolt behind the movable jaw and having a handle, a spiral cam on the plate next the movable jaw, and a nut on the bolt behind the plate, as and for the purpose set forth.

In testimony whereof I have hereunto subscribed my signature on this the 2d day of September, A. D. 1896.

SAMUEL ERNST.

Witnesses:

W. S. BARNETT,
E. M. BUTLER.